

exposing the photoresist on the first surface to an image to form a pattern in the form of at least one ring on the first surface;

removing the exposed photoresist on the first surface which is outside and inside the at least one ring to form an annular portion;

removing the etch-resistant material from the first surface of the substrate where the exposed photoresist was removed to form holes in the etch-resistant material;

optionally, removing all photoresist remaining on the first surface;

exposing the photoresist on the second surface to an image to form a pattern circumscribing extensions of the at least one ring formed in the etch-resistant material of the first surface;

removing the exposed photoresist on the second surface;

removing the etch-resistant material on the second surface where the photoresist was removed;

removing material from the substrate coincident with where the etch-resistant material on the second surface was removed to form a reservoir extending partially into the substrate;

optionally, removing the remaining photoresist on the second surface;

coating the second surface with an etch-resistant material;

coating the first surface with a second coating of photoresist;

exposing the second coating of photoresist within the at least one ring to an image;

removing the exposed second coating of photoresist from within the at least one ring to form at least one hole;

removing material from the substrate coincident with the at least one hole in the second layer of photoresist on the first surface to form at least one passage extending through the second layer of photoresist on the first surface and into the substrate to the extent needed to reach the etch-resistant material coating the reservoir;

removing photoresist from at least the first surface;

applying an etch-resistant layer to all exposed surfaces of the substrate;

removing the etch-resistant layer from the first surface that is around the at least one ring;

removing material from the substrate exposed by the removed etch-resistant layer around the at least one ring to define at least one nozzle on the first surface;

removing from the substrate at least the etch-resistant material coating the reservoir;

applying an etch-resistant material to all surfaces of the substrate;

filling at least one of the reservoir and the at least one passage with a polymerizable material; and

polymerizing the polymerizable material.

101. The method according to claim 100, wherein the substrate is made from silicon and the etch-resistant material is silicon dioxide.

102. The method according to claim 100, further comprising:

applying a silicon nitride layer over all surfaces after said applying an etch-resistant material to all uncoated portions of the substrate.

103. The method according to claim 100, wherein the polymerizable material comprises styrene, acrylic acid and its esters, methacrylic acid and its esters, vinyl pyridine, maleate, vinyl ester, vinyl ether, and vinylalcohol derivatives, crosslinked with divinylbenzene, ethylene dimethacrylate or diacrylate, diethylene glycol dimethacrylate or diacrylate, divinylpyridine, bis-N-vinyl-2-pyrrolidone, N,N-methylene-bisacrylamide or bismethacrylamide, or trimethylolpropane trimethacrylate.

104. The method according to claim 103, wherein the polymerizable material further comprises a porogen and an initiator.

105. The method according to claim 100, wherein at least one passage is filled with the polymerizable material.

106. The method according to claim 100, wherein the reservoir is filled with the polymerizable material.

107. The method according to claim 100, wherein the reservoir and at least one passage are filled with the polymerizable material.

108. The method according to claim 100, wherein multiple passages are filled with the polymerizable material.

109. A method of producing an electrospray device comprising:

providing an electrospray device having:

- a) an injection surface having an entrance orifice and a reservoir in fluid communication with the entrance orifice,
- b) an ejection surface opposing the injection surface having an exit orifice,
- c) a channel extending through the device between the entrance orifice and the exit orifice,
- d) a recess extending into the ejection surface and surrounding the exit orifice, and
- e) an electric field generating source positioned to define an electric field surrounding the exit orifice;

filling at least one of the passage and the reservoir with a polymerizable material; and

polymerizing the polymerizable material.

110. The method according to claim 109, wherein the passage is filled with the polymerizable material.

111. The method according to claim 109, wherein the reservoir is filled with the polymerizable material.

112. The method according to claim 109, wherein the reservoir and the passage are filled with the polymerizable material.

113. The method according to claim 109, wherein the polymerizable material comprises styrene, acrylic acid and its esters, methacrylic acid and its esters, vinyl pyridine, maleate, vinyl ester, vinyl ether, and vinylalcohol derivatives, crosslinked with divinylbenzene, ethylene dimethacrylate or diacrylate, diethylene glycol dimethacrylate or diacrylate, divinylpyridine, bis-N-vinyl-2-pyrrolidone,